What is claimed is:

1. A method for identifying whether a compound inhibits entry of a virus into a cell which comprises:

(a) obtaining nucleic acid encoding a viral envelope protein from a patient infected by the virus;

(b) co-transfecting into a first cell

(i) the nucleic acid of step (a), and

(ii) a viral expression vector which lacks a nucleic acid encoding an envelope protein, and which comprises an indicator nucleic acid which produces a detectable signal,

such that the first cell produces viral particles comprising the envelope protein encoded by the nucleic acid obtained from the patient;

(c) contacting the viral particles produced in step (b) with a second cell in the presence of the compound, wherein the second cell expresses a cell surface receptor to which the virus binds;

(d) measuring the amount of signal produced by the second cell in order to determine the infectivity of the viral particles; and

(e) comparing the amount of signal measured in step (d) with the amount of signal produced in the absence of

the compound, wherein a reduced amount of signal measured in the presence of the compound indicates that the compound inhibits entry of the virus into the second cell.

2. The method of claim 1, wherein the indicator nucleic acid comprises an indicator gene.

3. The method of claim 2, wherein the indicator gene is a luciferase gene.

4. The method of claim 1, wherein the cell surface receptor is CD4.

5. The method of claim 1, wherein the cell surface receptor is a chemokine receptor.

6. The method of claim 1, wherein the cell surface receptor is CXCR4 or CCR5.

7. The method of claim 1, wherein the patient is infected with the HIV-1 virus.

8. The method of claim 1, wherein the nucleic acid of step (a) comprises DNA encoding gp120 and gp41.

9. The method of claim 1, wherein the viral expression vector comprises HIV nucleic acid.

10. The method of claim 9, wherein the viral expression vector comprises an HIV gag-pol gene.

11. The method of claim 9, wherein the viral expression vector comprises DNA encoding vif, vpr, tat, rev, vpu, and nef.

12. The method of claim 1, wherein the first cell is a mammalian cell.

13. The method of claim 12, wherein the mammalian cell is a human cell.

14. The method of claim 13, wherein the human cell is a human embryonic kidney cell.

15. The method of claim 14, wherein the human embryonic kidney cell is a 293 cell.

16. The method of claim 1, wherein the second cell is a human T cell.

17. The method of claim 1, wherein the second cell is a human T cell leukemia cell line.

18. The method of claim 1, wherein the second cell is a peripheral blood mononuclear cell.

19. The method of claim 1, wherein the second cell is an astroglioma cell.

20. The method of claim 19, wherein the astroglioma cell is a U87 cell.

21. The method of claim 1, wherein the second cell is a human osteosarcoma cell.

22. The method of claim 2, wherein the human osteosarcoma cell is an HT4 cell.

23. The method of claim 1, wherein the compound binds to

the cell surface receptor.

24. The method of claim 1, wherein the compound is a ligand of the cell surface receptor.

25. The method of claim 23, wherein the compound comprises an antibody.

26. The method of claim 1, wherein the compound inhibits membrane fusion.

27. The method of claim 1, wherein the compound is a peptide, a peptidomimetic, an organic molecule, or a synthetic compound.

28. The method of claim 1, wherein the compound binds the viral envelope protein.

29. A method for making a composition which comprises admixing the compound identified by claim 1 with a carrier.

30. The method of claim 29, wherein the carrier is saline, polyethylene glycol, a buffer solution, a starch, or an organic solvent.

31. A method for identifying a cell surface receptor which is bound by a virus upon infection of a cell by the virus which comprises:

(a) obtaining viral particles which comprise (i) a viral nucleic acid and (ii) an indicator nucleic acid which produces a detectable signal;

(b) contacting a cell which expresses a cell surface receptor with the viral particles from step (a); and

(c) measuring the amount of detectable signal produced

within the cell, wherein production of the signal indicates the cell surface receptor expressed by the cell is bound by the virus, thereby identifying the cell surface receptor as being bound by the virus upon infection of the cell.

32. A method for identifying whether an antibody inhibits entry of a virus into a cell which comprises:

(a) obtaining nucleic acid encoding a viral envelope protein from a patient infected by the virus;

(b) co-transfecting into a first cell

(i) the nucleic acid of step (a), and

(ii) a viral expression vector which lacks a nucleic acid encoding an envelope protein, and which comprises an indicator nucleic acid which produces a detectable signal,

such that the first cell produces viral particles comprising the envelope protein encoded by the nucleic acid obtained from the patient;

(c) contacting the viral particles produced in step (b) with a second cell in the presence of the antibody, wherein the second cell expresses a cell surface receptor to which the virus binds;

(d) measuring the amount of signal produced by the second cell in order to determine the infectivity of the viral particles; and

(e) comparing the amount of signal measured in step (d) with the amount of signal produced in the absence of the compound, wherein a reduced amount of signal measured in the presence of the antibody indicates

that the antibody inhibits entry of the virus into the second cell.

33. A method for determining susceptibility of a virus to a compound which inhibits viral cell entry which comprises:

(a) obtaining nucleic acid encoding a viral envelope protein from a patient infected by the virus;

(b) co-transfecting into a first cell

(i) the nucleic acid of step (a), and

(ii) a viral expression vector which lacks a nucleic acid encoding an envelope protein, and which comprises an indicator nucleic acid which produces a detectable signal,

such that the first cell produces viral particles comprising the envelope protein encoded by the nucleic acid obtained from the patient;

(c) contacting the viral particles produced in step (b) with a second cell in the presence of the compound, wherein the second cell expresses a cell surface receptor to which the virus binds;

(d) measuring the amount of signal produced by the second cell in order to determine the infectivity of the viral particles; and

(e) comparing the amount of signal measured in step (d) with the amount of signal produced in the absence of the compound, wherein a reduced amount of signal measured in the presence of the compound indicates that the virus is susceptible to the compound.

34. A method for determining resistance of a virus to a compound which inhibits viral entry into a cell which comprises:

(a) determining susceptibility of a virus to a compound according to the method of claim 33, wherein a nucleic acid encoding a viral envelope protein is obtained from a patient at a first time;

(b) determining susceptibility of the virus to the compound according to the method of claim 33, wherein the nucleic acid encoding the viral envelope protein is obtained from the patient at a later second time; and

(c) comparing the susceptibilities determined in steps (a) and (b), wherein a decrease in susceptibility at the later second time indicates resistance of the virus to the compound.

35. A method for identifying a mutation in a virus that confers resistance to a compound that inhibits viral entry into a cell which comprises:

(a) determining the nucleic acid sequence or the amino acid sequence of the virus prior to any treatment of the virus with the compound;

(b) obtaining a virus resistant to the compound;

(c) determining the nucleic acid sequence or the amino acid sequence of the resistant virus from step (b); and

(d) comparing the nucleic acid sequence or the amino acid sequences of steps (a) and (c), respectively, so as to identify the mutation in the virus that confers

resistance to the compound.

36. The method of claim 35, wherein the virus obtained in step (b) is the virus of step (a) grown in the presence of the compound until resistance is developed.

37. The method of claim 35, wherein the virus obtained in step (b) is isolated from a patient which has been undergoing treatment with the compound.

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Sub. + add B'